

## TWO NEW MICROCADDISFLIES (TRICHOPTERA:HYDROPTILIDAE) FROM ALABAMA AND FLORIDA<sup>1</sup>

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**ABSTRACT:** Two new species of microcaddisflies, *Neotrichia rasmusseni*, from north-central Florida, and *Oxyethira pescadori*, from northern Florida and southern Alabama, are described and illustrated. New figures of *Neotrichia armitagei* and *Oxyethira lumosa*, closest relatives of the new species, are included for comparison.

Ongoing collecting in spring-fed streams and other aquatic habitats in northern Florida by Manuel Pescador and Andrew Rasmussen of Florida A&M University has yielded several new species of caddisflies. In this paper, we describe two new microcaddisflies uncovered by these studies, one each in the genera *Neotrichia* and *Oxyethira*. The new *Neotrichia* is reported from a single locality in north-central Florida, but the new *Oxyethira* is widespread in northern Florida and southern Alabama. Terminology used in the descriptions follows that of Marshall (1979). Type material will be deposited at the National Museum of Natural History, Smithsonian Institution (NMNH), Florida State Collection of Arthropods (FSCA), Illinois Natural History Survey (INHS), the Pennsylvania State University, Frost Entomological Museum (PSU), Florida A&M University (FAMU), and the collection of the senior author (SCH).

### *Neotrichia rasmusseni* NEW SPECIES

(Fig. 1)

**Diagnosis.** *Neotrichia rasmusseni* is very similar to *N. armitagei* Harris (fig. 2 and Harris 1991) in overall appearance. Both species are only known from Florida, but *Neotrichia armitagei* is apparently limited to small streams across northern Florida and into southwestern Georgia. Both species have highly reduced, knoblike inferior appendages, but those of *N. rasmusseni* are small and nearly square, as compared to the larger more oblong structures seen in *N. armitagei*. *Neotrichia rasmusseni* also differs in the lateral appearance of segment X which is constricted at midlength, distally producing a slender up-turned rod. In *N. armitagei* segment X is tapered gently over its entire length to a somewhat rounded apex. The phallic paramere also differs between these two species. It is flat and ribbonlike in *N. rasmusseni* and round and threadlike in *N. armitagei*.

**Description. Male.** Length 1.8 - 2.0 mm. 18 antennal segments. Golden-brown in alcohol. Abdominal segments VII and VIII annular. Segment IX arising from within segments VII and VIII, anterior margin long, tapered to fingerlike apex, posterior margin blunt, sclerotized; bracteoles small, spatulate, curved ventrad in lateral view; in ventral view short, spoonlike. Seg-

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ment X fused with dorsum segment IX; in lateral view dorsally setose to midlength, constriction producing slender, distal rod, nearly uniform to distinctly upturned apex with scalloped margins; in dorsal view tapered distally with broad, mesal field of short setae, narrowed apex rolled dorsad. Subgenital plate slender in lateral view, fine sclerotized ridge along margin, narrowed apex bearing elongate seta; in ventral view bifid, paired processes slender, broadening at lobate apex, each producing apical seta. Inferior appendage highly reduced with curved, sclerotized, dorso-lateral margin swelling to apical knob in lateral view; in ventral view small, nearly square in overall shape, sclerotized apicolateral corners knoblike, mesal knob producing single, short seta, diagonal row of setae on ventral surface. Phallus long and narrow with medial constriction giving rise to flat, ribbonlike paramere; apical portion long and broadening slightly to membranous tip, dorsally sclerous; pair of elongate, sclerotized hooks ventrolaterally, curving upward apically; ejaculatory duct narrow over length, non-protruding.

**Type Material.** **Holotype**, ♂. FLORIDA. Suwannee County, Santa Fe River at Hwy. 129, 20 November 1996, A. Rasmussen (NMNH). **Paratypes**. FLORIDA, same as type locality, 11 ♂♂ (NMNH, FSCA, INHS, PSU, FAMU, SCH).

**Distribution.** *Neotrichia rasmusseni* is known only from the type locality in north-central Florida.

**Etymology.** Named for Andrew Rasmussen, who collected the type series; in recognition of his extensive collecting in northern Florida and his contributions to our knowledge of the fauna of this region.

### *Oxyethira pescadori* NEW SPECIES

(Fig. 3)

In the course of identifying a long series of what was thought to be *Oxyethira lumosa* Ross from the collections of Pescador and Rasmussen in northern Florida, it became apparent that the structure of the phallus was not always consistent with the published figures of Ross (1948) and the unpublished figures of Kelley (1982). A comparison with material collected throughout Alabama, showed the same inconsistencies. After careful examination of the type of *Oxyethira lumosa*, it was determined that the material represented two closely related species. Positive identification was possible only with the teasing out of the phallus tip and examining the terminal rod. Both species were often collected together, and both appear to be widely distributed in northern Florida and southern Alabama.

**Diagnosis.** *Oxyethira pescadori* is very similar to *O. lumosa* (fig. 4), both, in ventral view, having the distinctive sclerotized "buttonlike" inferior appendages. This character was readily used to identify *O. lumosa*, and led to our initial confusion of the two species. *Oxyethira pescadori* is most easily separated using the structure of the terminal phallic rod which is strongly curved and projects distally. In *O. lumosa*, this rod curves laterally around the shaft of the phallus. There are other differences between the two species, including the bifid subgenital plate and the deeply incised dorsum of segment IX, which are unique to *O. pescadori*.

**Description.** **Male.** Length 2.2 - 2.8 mm. 29 antennal segments. Brown in alcohol. Segment VII annular with short ventromesal process. Segment VIII annular. Segment IX completely en-

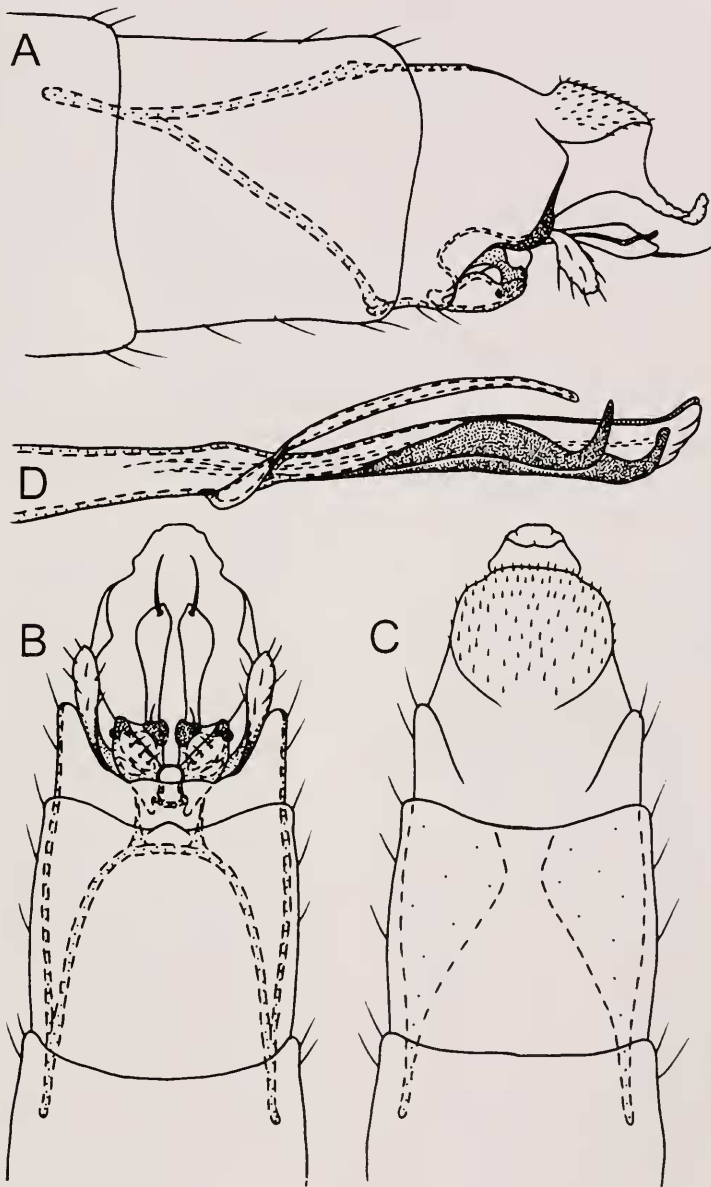


Figure 1. *Neotrichia rasmusseni*, n. sp., male genitalia. A. Lateral view; B. Ventral view; C. Dorsal view; D. Phallus, lateral view.

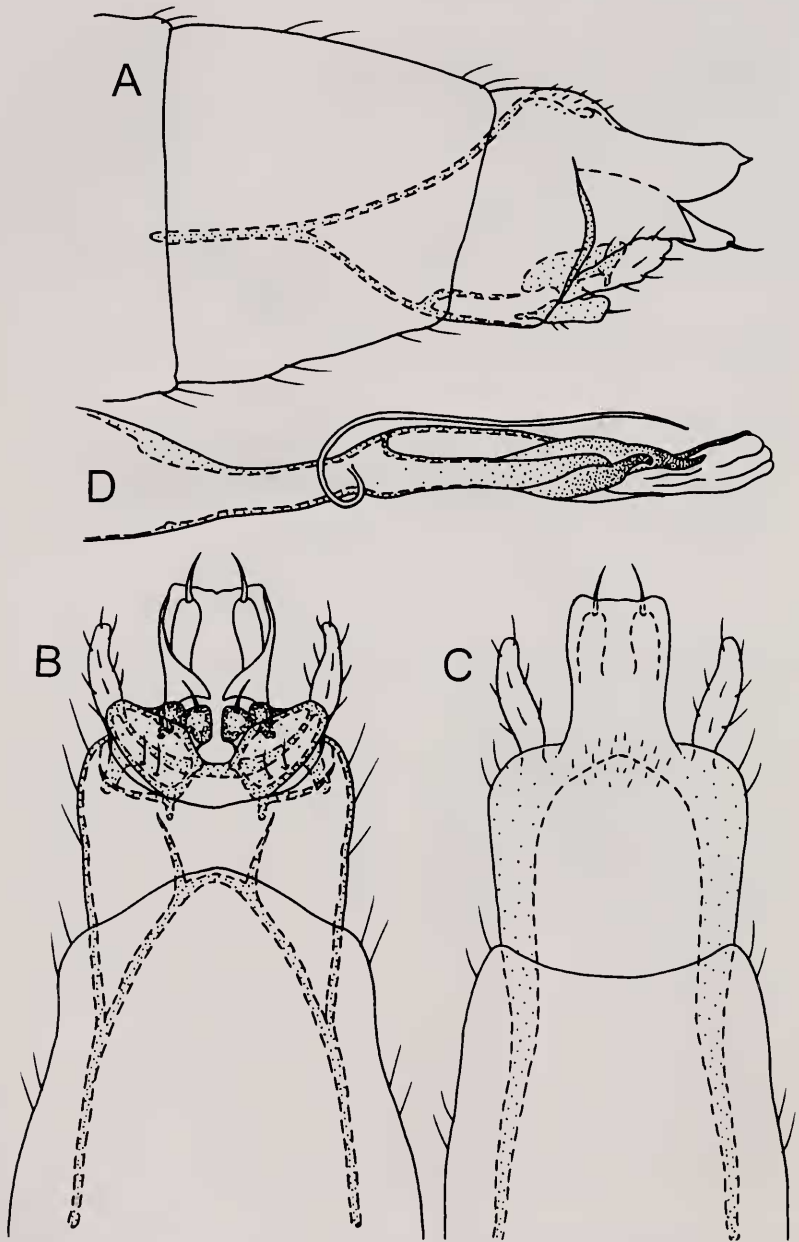


Figure 2. *Neotrichia armitagei* Harris, male genitalia. A. Lateral view; B. Ventral view; C. Dorsal view; D. Phallus, lateral view.

closed within VIII, tapering anteriorly, narrowing posterodorsally, pair of small setiferous lobes from posterolateral margins. Segment X reduced to short, membranous lobe. Subgenital plate bifid posteriorly in lateral view, pair of setiferous lateral lobes, dorsal lobe large and bulbous, ventral lobe thin; in dorsal view consisting of two oblong plates, converging mesally, pair of setiferous lobes posteriorly and basally. Inferior appendages heavily sclerotized, short and narrow laterally, tapering distally; in ventral view round, fused mesally with narrow posterior inci-

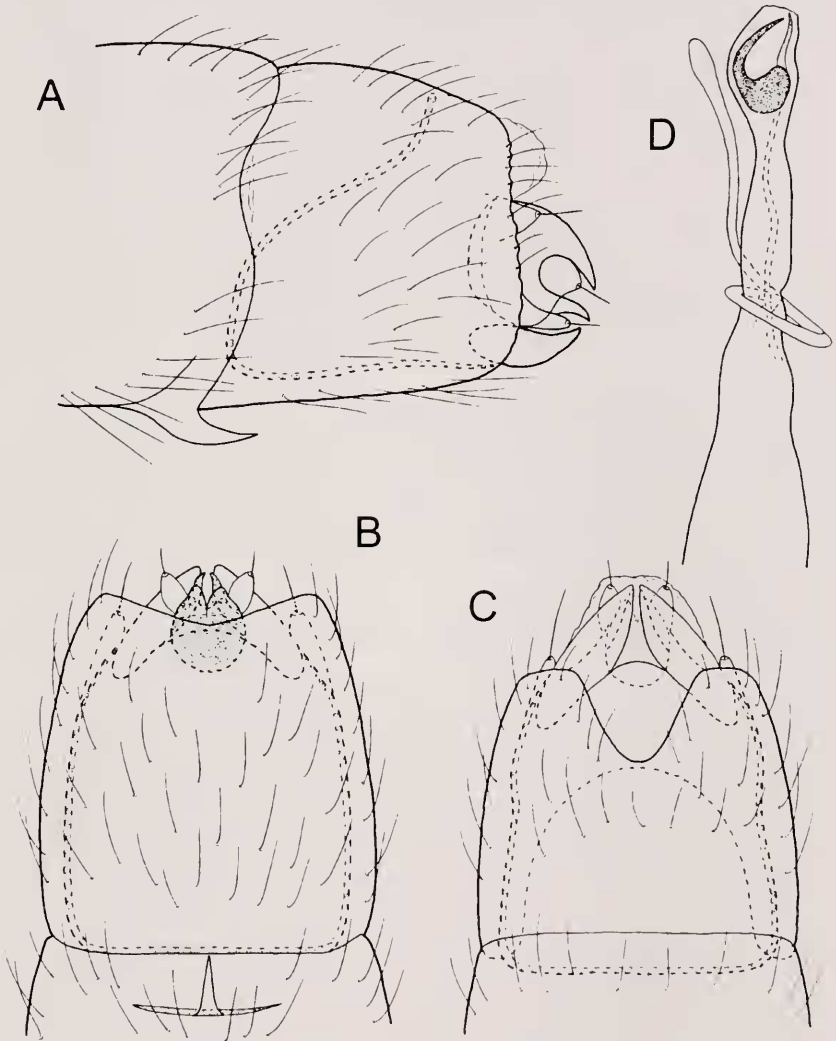


Figure 3. *Oxyethira pescadori*, n. sp., male genitalia. A. Lateral view; B. Ventral view; C. Dorsal view; D. Phallus, ventral view.

sion. Phallus tubular with large posterior, sclerotized rod which is strongly arched and projecting distally; ejaculatory duct a thin rod apically; paramere encircling shaft at midlength.

**Type material.** **Holotype**, ♂. ALABAMA. Henry County, East Fork of Choctawhatchee River at Co. Hwy. 40, 10.5 km WSW Abbeville, T7N,R27E,S29, 25 May 1989, T. Shepard, S. McGregor (NMNH). **Paratypes**. ALABAMA. Autauga County, Swift Creek at Co. Hwy 53, 3.2 km E Billingsley, T20N,R14E,S32, 11 May 1988, S. Harris, 1 ♂ (NMNH); Chambers County,

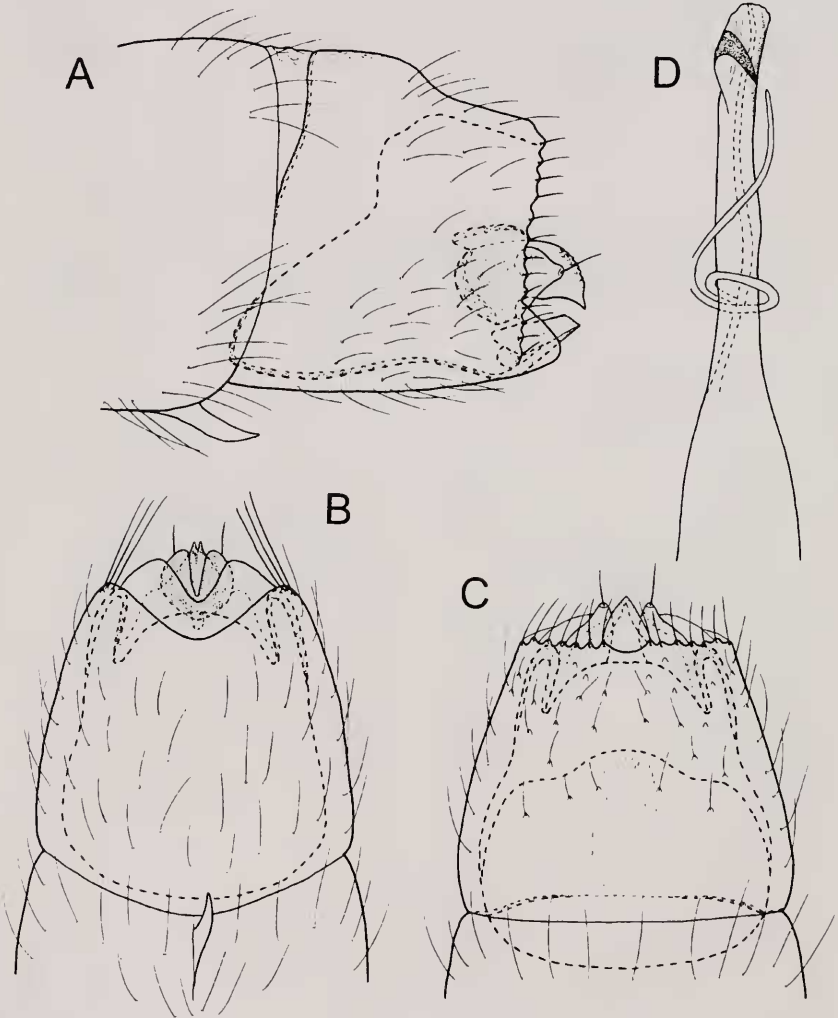


Figure 4. *Oxyethira lumosa* Ross, male genitalia. A. Lateral view; B. Ventral view; C. Dorsal view; D. Phallus, ventral view.

Snapper Creek, on unnumbered Co. Rd., 12.3 km S Lafayette, T21S,R26E,S27, 2 June 1988, S. Harris, 2 ♂♂ (NMNH); Clarke County, Fishers Creek, on unnumbered Co. Rd., 1.1 km SSW Whately, T8N,R3E,S25, 30 April 1981, S. Harris, P. O'Neil, 1 ♂ (INHS), same locality, but 8 May 1986, 1 ♂ (SCH); Conecuh County, Sepulga River at River Springs Campground off US Hwy. 31, 16 km ENE Evergreen, T6N,R13E,S29, 8 May 1986, S. Harris, P. O'Neil, 1 ♂ (FAMU); Covington County, Blue Spring on unnumbered Forest Rd., 2.6 km E Open Pond, Conecuh National Forest, T2N,R15E,S35, 22 April 1981, S. Harris, P. O'Neil, 3 ♂♂ (INHS); Crenshaw County, Patsaliga Creek, 14.5 km W Petry, 3 May 1988, S. Harris, P. O'Neil, 1 ♂ (PSU); Escambia County, Escambia River at railroad bridge in Flomaton, T1N,R8E,S34, 8 June 1982, S. Harris, P. O'Neil, 401 ♂♂ (NMNH, INHS, FSCA, PSU, FAMU, SCH); Mobile County, Big Creek at Co. Hwy. 63, 4 km NE Wilmer, T2S,R4W,S24, 25 June 1982, S. Harris, P. O'Neil, 3 ♂♂ (SCH); Russell County, Hatchechubbee Creek on unnumbered Co. Rd. 8.9 km ENE Rutherford, T14N,R28E,S4, 17 May 1989, T. Shepard, P. O'Neil, 1 ♂ (SCH). FLORIDA. Clay County, Gold Head Branch near head of ravine, Gold Head State Park, N29°50'27"00", W81°57'14", 27 June 1998, A. Rasmussen, 3 ♂♂ (NMNH); Leon County, Black Creek at St. Hwy. 364, N30°30'03", W84°04'50", 4 April 1998, A. Bolques, A. Rasmussen, 1 ♂ (INHS); Okaloosa County, East Turkey Hen Creek at head, Eglin Air Force Base, 0.3 km W. Okaloosa Lookout Tower, N30°38'48", W86°33'23", 25 May 1998, M. Pescador, A. Rasmussen, 3 ♂♂ (FAMU), Juniper Creek at head, Eglin Air Force Base, W side of Base Rd. 231, SE Duke Field, N30°57'46", 86°30'05", 21 May 1998, M. Pescador, A. Rasmussen, 6 ♂♂ (FSCA), Juniper Creek, Eglin Air Force Base, at Base Rd. 221, 0.8 mi E St. Rd. 85, N30°36'29", W86°31'24", 24 May 1998, M. Pescador, A. Rasmussen, 6 ♂♂ (SCH).

**Distribution.** Records for *O. pescadori* are from the Coastal Plain of Alabama and northern Florida. Kelley (1982) gives the distribution of *O. lumosa* as southeastern U.S. The type of *O. lumosa* is from Daytona Beach in northeastern Florida, and we have seen material from northwestern Florida, and from both northern and southern Alabama. Until all previous records of *O. lumosa* are reexamined, it is impossible to speculate on the distributions of the two species.

**Etymology.** Named for Manuel "Manny" Pescador, long-time friend and colleague, in recognition of his many contributions to aquatic entomology in Florida.

#### ACKNOWLEDGMENTS

Appreciation is expressed to Manny Pescador and Andy Rasmussen of Florida A&M University for allowing us to examine microcaddisflies in their collections from northern Florida. Colin Favret of the Illinois Natural History Survey kindly lent us the type of *Oxyethira lumosa* for examination. Pat O'Neil, Stuart McGregor, and Tom Shepard, of the Geological Survey of Alabama, assisted in the collection of much of the Alabama material, and are due many thanks for enduring the collecting zeal of the senior author during his time at the GSA. We would also like to acknowledge the efforts of Howard Boyd, editor of Entomological News, on this paper and many others over the years, as he steps down from this post.

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